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# *Vegetables and Vitamines*

VOLUME I

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PRIVATELY PRINTED BY  
THE PEOPLE'S HOME JOURNAL  
NEW YORK

TX391  
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F. M. LUPTON, PUBLISHER  
NEW YORK

MAY 14 1922

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**H**UMAN experience is the great discoverer. Its accumulated evidence supplies man with his best chart for guidance in many fields. Often it leads the way for science.

Never has this been truer than in the case of vegetables. For thousands of years, primitive man subsisted chiefly on meat food. Then, with the advent of walled houses, he took more to grains and fruits. Inside living made fewer demands on his body. Lessening of physical exertion led to lighter foods. But he laughed at those who ate what he called leaves.

As time went on and nature's supply of animal food to be had "free for the hunting" fell away, more attention was paid to other sources of nutrition. Following the meat age came the cereal age. And now, while still doing justice to the dictates of those two eras, we stand at sun-up in the vegetable age.

The human family, having satisfied itself that vegetables were good for its progress as well as its palate, science set to work to find a cause for this condition. Within the last ten years she has centered

her search for food facts on the vegetable kingdom, and been rewarded by one of the most remarkable discoveries of all time—that of the Vitamine.

*The finding of this nutritive attribute so indispensable to the development and maintenance of the body, marks as notable a milestone in man's onward march as the figuring out of the Earth's motion by Copernicus, the discovery of the law of gravitation by Newton or the harnessing of lightning by Franklin. For it gives man a new tool with which to carve out his higher destiny.*

These curious elements are known to exist in other than vegetable foods or food derivatives, but they abound most generously in milk, which is primarily of vegetable origin, and in vegetables. They are our chief defense in so-called deficiency diseases—affections caused or intensified by inadequate diets. These troubles include scurvy, rickets, xerophthalmia—a disease of the eyes—pellagra and beri-beri, and may be classed as typical modern disorders, following naturally the crowding of great masses of people into close living quarters where they are dependent on perishable foodstuffs that must come from a distance, and to even greater extent on foods processed to withstand climatic conditions and keep well.

By this time everyone knows of the importance of vitamins in the daily diet. There are still a great many persons, however, who do not know how best to take advantage of them through larger and more constant use of vegetables. The subject



is one of such wide extent that it cannot be successfully dealt with in a single article. That is why I decided to divide this discussion into two parts.

### *Why We Need Vegetables*

VEGETABLES are vital because three most important health and strength elements are supplied to the body through them—*cellulose, mineral salts and vitamins*.

Cellulose is the fibrous part of a vegetable which cannot be digested, and therefore has no actual nutritive value, but which furnishes the bulk needed to make the intestines function properly. In order to pass along anything the first need is to have something to pass along! Cellulose provides for this need, and by supplying a sufficiency of non-assimilable solid matter stimulates both the stomach muscles and those of the thirty-foot tubular channel which receives the churned food mass from the stomach, sucks in its nutritive elements through millions of little mouths and, after extracting what the body needs, disposes of the waste. It is for this reason that persons who eat too little vegetable food usually suffer from constipation.

Cellulose also helps to health by making necessary the chewing of food, exciting a normal flow of saliva and at the same time giving the teeth the exercise they need in order to keep strong and durable. There is a certain amount of cellulose in nearly every food we eat, but this regulative matter abounds chiefly in vegetables.

*The Chief Source of Mineral Salts*

As a chief source of mineral salts, vegetables would be valuable if this were their sole virtue. The function of mineral salts in the body may be compared to that of oil in the operation of mechanical devices. All the steam or electricity that can be generated by energy-making fuel must soon lead only to waste and loss unless the machinery operated through such power is kept well oiled.

What is true of iron, steel and wood in this particular is equally true of blood, muscle and bone. A sufficiency of energy-making food-fuel and body-building food material will not suffice for normal maintenance of health, strength and usefulness, unless certain mineral salts—notably iron, lime, sulphur and phosphorus—are included in what we eat.

Many minerals are found in the blood, and their presence in the life-fluid proves their need. Sodium, chlorine and potassium are necessary to the digestive juices, and the last-named also helps to defend the system against excess acidity. Lime, phosphorus, magnesia, silica and fluorine are among the chief bone and teeth builders. Silica, in combination with sulphur, also serves to keep the hair in good condition. Sulphur is found, in some measure, in all the tissues and secretions of the body. Potassium helps to keep the muscles soft and pliable and plays an important part in the regulation of the nervous system, being also essential in the diet of growing children. There is fluorine in the whites of our eyes and iodine is found in the thyroid gland. If children do

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not receive sufficient lime and phosphorus their bones and teeth suffer, while a lack of iron causes anemia. A diet including vegetables, fruit, whole cereals and egg yolks in addition to milk, all of which contain mineral salts, is essential to their growing needs. Many cases of malnutrition could be avoided if these simple, wholesome foods were always provided.

From this brief review of their place in the body, it can be seen that such mineral salts as come to us through vegetables are indispensable to what we call body balance. Everyone knows a diet deficient in them leads to weakness or lack of health and frequently, as in the case of iron deficiency which is the direct cause of anemia, brings on some definite and disastrous disease.

After so endowing vegetables with things man must have, one might think nature had done enough. But she seems to have had a different idea—and although man remained in ignorance of the form of her further bounty until the present century was well on its way, she has made vegetables absolutely invaluable by constituting them among her favorite carriers of vitamins, or, as I prefer to call these newly-discovered elements, “life guards.”

Just what vitamins are and just how they function are matters science has not yet determined. It has been proved beyond the shadow of a doubt, however, that their part in the transformation of food into human thought and action is as necessary as provision of fuel and building material for the body.

The only way to fully appreciate their place and power is to compare the physical and mental condition of a person who gets enough of them in his food with that of a person who does not. Hence the threefold importance of putting the right emphasis on vegetables in our daily diet.

*The Versatility of Vegetables*

In no other field of food is there such an abundant and varied embarrassment of riches. For everyday use three general groups serve to classify them—the carbohydrates, legumes and watery vegetables.

Those richest in starch and sugar come under the head of carbohydrates, and include beets, carrots, corn, egg plant, parsnips, turnips, white and sweet potatoes and onions. The legumes are beans—lima, green, wax, fresh or dried—peas, lentils and peanuts. Yes, the peanut is a vegetable and first cousin to the bean, at that. The watery vegetables are asparagus, cabbage, celery, cauliflower, cucumbers, peppers, summer and winter squash, spinach, lettuce, radishes, tomatoes, turnips, and all so-called salad greens.

Whatever its other characteristics, hardly one vegetable in these lists fails to supply at least some measure of one or more of the three known kinds of vitamins—the fat-soluble A, which prevents or corrects rachitic conditions; the water-soluble B, which is nature's defense against the various functional disorders of the nerves, and the water-soluble C,



which stands out as the great foe of scurvy and allied diseases.

### *Vegetables' Virtues in Particular*

OF course, we are not to eat vegetables solely for the sake of vitamins. We couldn't if we wanted to, because they possess so many other attractions and food virtues. First of all they are richly endowed with flavor, that primary consideration in all food. Being largely composed of water, they are easy and pleasant to eat—and this is pure, distilled water, fresh from nature's fountain of health. Even their form and color are calculated to please the sense of sight, which is the first gate to food selection, and the ease with which they can be grown for home use is another commendable quality.

The family with an unused available garden space is guilty of high treason not only to its appetite, but likewise to its health and finances. A palate that is not familiar with the food joy of fresh vegetables, which have not become withered in their journey from soil to serving, is indeed to be pitied. And since the cultivation of all but a few of these delectable forms of food requires no more time, skill nor effort than is available in the average home, a home vegetable garden assumes the proportions of a duty—and a most pleasant one!

The fresher a vegetable, the better it tastes and the more it does to help in health and strength-making, for taste is the forerunner of good digestion. Much, however, depends upon the manner of serv-

ing. And since I am reserving the second article in this series for consideration of vegetables which commonly are eaten raw as well as cooked, it is permissible to say here that almost as much depends on proper preparation as on freshness.

*Young Vegetables Are Best*

As with Dr. Holmes' recipe for the education of a child that it should begin five generations before the child is born, so in the matter of properly preparing cooked vegetables, the "cooking" should begin with the selection.

One reason why many persons are not enthusiastic about vegetables is this—that so seldom are vegetables eaten young enough. The mere fact that they are fresh is not sufficient to guarantee a full measure of flavor or food value. For the younger they are—when matured—the more vitamins they contain.

It is quite possible to serve a dish of peas which were still hanging on the vines two hours before dinner, and disgust those at the table with a hard, tasteless portion. Whereas a young turnip may be one of the tenderest and most delicately flavored of viands, its twin brother a few weeks older can be so tough and strong as to make one wish there were a law against the serving of turnips. Two ears of sweet corn broken off the stalk four or five days apart may represent extremes of food delight and food distress.

So in the selection of vegetables, whether from

your own garden, the market stall or the trucker's wagon, think more of youth and less of bulk. Of course, it is foolish to gather or buy underdeveloped vegetables, but it is equally foolish to be misled by size into a lack of succulency.

Just here let me inject another thought worth remembering. Unless compelled by circumstances to do so, never buy fresh vegetables far in advance of their proposed use. The nearer you come to the garden in point of eating them, the better they taste and the more good they do you.

### *Losses Caused by Bad Cooking*

Both the flavor and benefits of the average cooked vegetable as served at the table depend so largely on the cooking that hosts of persons who never have happened to connect with a kitchen possessed of sound sense in this particular are practically unacquainted with the palate pleasure and health virtues of fresh vegetables. In this laudable endeavor they are thwarted by two common mistakes—over-cooking and waste of the water in which the cooking is done. The former destroys the flavor and the latter robs the consumer of the vital mineral salts which constitute one of the chief nutritional virtues in this class of food, and lack of which in the diet may lead to disease and death.

The potato, for instance, is notably rich in potassium salts and iron, but a large part of these benefits is usually wasted by the common method of preparing them. That is, they are most frequently

pared and boiled and then the water in which they are cooked and which extracts a large percentage of their mineral salts is discarded. The custom of placing pared potatoes in water to keep them from becoming discolored also decreases the content of these vital food elements. Indeed the ideal way to cook this vegetable is with the skin on, as the mineral salts are stored just under the skin. When well scrubbed the skin should also be eaten as it supplies good bulk food.

If you object to paring hot potatoes, as many housewives do, cook your pared potatoes to the best possible advantage. First scrape, don't pare, and then immerse at once in rapidly boiling salted water—the salt helps to conserve the mineral salts. Cook quickly until tender. Drain at once and place in a warm oven covered with a clean towel until serving time. The towel allows the steam to pass off and absorbs the moisture, thus keeping the potatoes from getting soggy while a galvanized cover of any kind causes steam condensation and a soggy product. As with nearly every other vegetable cooked after peeling, the water in which they are cooked should be saved and used for soups and sauces. Baked potatoes should always be cooked in a hot oven and served at once. Greasing the skin makes them more tender and thus renders them more likely to be eaten as bulk food.

Bear this in mind—that quick cooking always is better than slow cooking. The former tends less to heat-destruction of the vitamins in the vegetables.



### *Potatoes as Protectors*

By common consent the potato is the high potentate of the vegetable kingdom. The reason for this is not its plentifulness—many other vegetables would become as abundant if the demand existed—nor its remarkable keeping qualities—several others keep equally well. It is not even due to its flavor, for in this it is excelled by at least half a dozen among its kindred.

Back of the popularity of the potato is its wonderful nutritive power and the fact that there is practically no other vegetable which comes so near to supplying complete sustenance. Of course, no vegetable contains enough fat to provide an adequate ration of that necessary element, but it has been shown through prolonged experiments in Denmark and elsewhere, that working men can successfully perform a reasonable round of daily labor for many consecutive months on a diet consisting solely of potatoes, with the addition of a small quantity of butter or oleomargarine.

The potato is one-fifth starch and therefore supplies excellent heat and energy food. It contains one and a half per cent protein or muscle-building material. In addition to its high nutritive value it possesses important regulatory properties—it tends to prevent fermentation in the intestines and to act as a solvent of uric acid. And it is the vegetable upon which civilized folk are chiefly dependent for protection against scurvy—not that it possesses any great proportional power as an anti-scorbutic, but

that it is eaten in such quantities as to supply a large measure of this valuable defense. This fact has led science to believe that health is largely regulated by the quantity of vegetables eaten.

The above statements refer to the white potato, of which we Americans eat more than 25,000,000,000 pounds annually. Now the sweet potato is superior to it in every way except iron content, but its sweetness precludes the possibility of its being used so continuously in the diet.

Next in food importance among the carbohydrate vegetables are parsnips and onions, and the latter not only supply valuable food constituents but also rank as the foremost of all flavor sources in cookery. They are, by the way, more digestible when cooked.

The parsnip seems to be a misunderstood member of the vegetable family. This lack of appreciation is due largely to the fact that parsnips seldom are offered for sale until too old to be really good. They contain a large measure of nutritive elements, however, and are most delicious if used before they become old roots with an excess of tough, woody fibre. Their sweet flavor combines especially well with fat meats such as pork and goose.

It would seem almost useless to question the digestibility of potatoes, parsnips and onions, for in a majority of cases the stomach handles them with great ease. There are persons, however, who cannot successfully assimilate these vegetables—persons possessed of such idiosyncrasies as may cause one individual to be unable to drink milk or another to

be poisoned by eggs. As a general rule, however, most vegetables are easily digested—the more so if properly selected and prepared so as to retain their flavor.

Scientific experiments have shown that the vegetables most easily digested by the average stomach are *artichokes, beet-root, cauliflower, potatoes, spinach and tomatoes*. Those which most frequently give rise to digestive disturbance are cabbage, cucumbers and mushrooms. Many vegetables, such as parsnips and turnips, are easier of digestion when mashed, and if dried peas, beans or lentils cause flatulence, it is well to make the experiment of eating them in the form of soup.

In this connection it is well to remember that while there is no marked difference in the digestion of steamed or boiled vegetables, there is less danger of loss of mineral salts where the steaming process is used. So to boil all vegetables, simply because it happens to be the handiest method, is one way of lessening their food value. Baked vegetables are best of all because they retain their flavor, and to create a desire for food through flavor is to pave the way to its proper handling by the stomach and intestines.

### *The Bean a Meat Saver*

SHARING the vegetable throne with the potato is the bean, chief representative of the legumes, which contains a higher percentage of protein than any of the other vegetables. Beans also are rich in calcium

and sulphur. Dried beans, which of course, are the seed, often are spoken of as a substitute for meat and in oriental countries serve this purpose, China using the soy bean as a chief food. But recent nutritional experiments have proven that protein found in beans is far inferior to that found in meat and for this reason we should not use them as a meat substitute. Above all, they should not be regarded as the poor man's meat. Undoubtedly the Chinese diet is inadequate and their progress as a nation has been thereby handicapped.

The fresh vegetable is not so hearty as the dried, although they do provide an unusually large measure of nutriment, if it is properly conserved in cooking. In the cooking of green string beans and wax beans there is a tendency to let them stay on the stove too long. Rapid boiling in salted water and in covered vessels is the best method of conserving their food elements and flavor. The addition of soda to the water to keep them green in color helps to rob them of mineral salts. This is a common practice but a bad one.

As for peas, there is no vegetable quite so dependent for goodness on proper cooking. Peas are highly nutritious and like the other members of their group are primed with protein and useful as body-building material. Their true delight as a food must remain unknown until one has eaten them fresh-picked an hour or two before serving. When cooked rapidly just to a turn and served in the water in which they were boiled they make a dish fit for a king.



It is in the marked variety of flavor and texture that vegetables have come to make such an appeal to the palate. In the main, they are most acceptable when simply cooked—that is, if in fresh or perfect condition at the time of preparation. For those who prefer fancy dishes they provide endless opportunities for variation.

Most of the vegetables of which I have spoken in this article are edible only when cooked. Many of those I shall discuss in the next article can be eaten without cooking. It is through these that we get our largest supply of vitamins. Yet, important as are these elements, it must be remembered that any vegetable, whether cooked or uncooked, is a valuable addition to the diet, and that nature's provision of fresh vegetables in summer is one of the surest guides to what should be eaten at this season of the year.

## RECIPES

### *Stuffed Onions*

Parboil six large onions for thirty minutes in boiling salted water. Drain and turn upside down to cool. When cool, use a sharp knife and a spoon to remove part of the centers of the onions. Chop these and mix with one-half cupful of stale bread crumbs, one-half teaspoonful of salt, one-eighth teaspoonful of pepper, two tablespoonfuls of melted butter, one-half cup of chopped meat, nuts, or cheese and enough boiling water to moisten. Stuff the cavities of the onions with the mixture, place in a greased shallow pan, sprinkle with buttered crumbs and bake in a moderate oven until soft—about twenty-five minutes. Several times during cooking baste with one-half cupful of boiling water mixed with three tablespoonfuls of melted butter.

### *Baked Egg Plant*

Peel and slice one egg plant and cut in small cubes, of which there should be two cupfuls. Soak in cold salted water one-half hour, then drain. Mix with one onion finely chopped, one cup of soft bread crumbs, one teaspoonful of salt, one-fourth teaspoonful of paprika and two tablespoonfuls of butter. Pour into a greased baking dish, moisten with one-half cupful of boiling water and dot with one tablespoonful of butter. Bake in a moderate oven for one hour.

### *Potato Fondue*

Mix one and one-half cupfuls of mashed potato with one cupful of scalded milk. Stir in one cupful of cheese cut fine, three-fourths teaspoonful of salt, one-half teaspoonful of paprika and the yolks of two eggs. Butter a baking dish and cover the bottom with two tablespoonfuls each of chopped green pepper and pimento. Pour in the potato mixture and bake in a hot oven for about twenty-five minutes, or until well puffed, firm and brown.

### *Baked Sweet Potatoes and Apples*

Parboil six medium-sized sweet potatoes for fifteen minutes, drain, peel and cut in one-fourth-inch slices. Peel, core and slice five tart apples. In a greased baking dish place a layer of potatoes close together. Cover with a thick layer of apples, sprinkle with brown sugar and dot with pieces of butter, using about four tablespoonfuls of each. Pour one-third cupful of water over the top. Cover and bake in a moderate oven until the potatoes and apples are tender. Uncover and brown quickly.

### *How to Cook Peas*

Having removed the pods, place the peas in a bowl of cold water. Skim off undeveloped peas and bits of pod that rise to the surface.

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Cook in boiling water just sufficient to cover and cover the pan closely. Add one teaspoonful sugar to each two cupfuls of peas if they are old or have lost their natural sweetness through being picked a long time. Season with salt, pepper and butter, and serve with the liquid remaining in the pan in which the peas were cooked. Not more than one-half cupful of this liquid should be left when the peas are cooked. Mixed with a little flour and milk the liquid makes a cream sauce for the peas.

### *Peas in Turnip Cases*

Peel six medium-sized white turnips and remove the centers with a strong spoon or a vegetable cutter, leaving a shell about one-fourth inch thick. Cook in boiling salted water for about twenty-five minutes, or until tender. Drain thoroughly and place on a hot platter. Mix two cupfuls of canned or freshly cooked peas with four tablespoonfuls of butter, one-half teaspoonful of salt and one-eighth teaspoonful of pepper. Heat in a double boiler and use to fill the turnip cups. The peas may be mixed with one cupful of well seasoned white sauce if desired, or the sauce may be poured around the turnips. If a vegetable cutter is used, boil the turnip balls, roll in chopped parsley and use as a garnish.

### *Pea Soup*

Wash one pound of young peas in the pod. Without shelling break the pods in pieces and cook in one and one-half pints of boiling water with one tablespoonful of minced onion and a small sprig of mint until the pods are soft. Press through a colander or coarse strainer, saving the liquid. Measure and add enough boiling water to make two and one-half cupfuls of pulp and juice. Melt three tablespoonfuls of butter, add two tablespoonfuls of flour, and stir in the vegetable mixture. When the soup begins to thicken add one pint of scalded milk and salt and pepper to season.

### *Butter Beans with Parsley Sauce*

Wash the beans, remove tips and strings, and cut in one-half-inch pieces. Boil until tender in just enough water to cover. Drain, but save the water. Melt two tablespoonfuls of butter, add two tablespoonfuls of flour and stir in one-half cupful of milk and one-half cupful of the water in which the beans were cooked. Cook until thickened and add one teaspoonful of salt, a few grains of pepper, one-half teaspoonful of lemon juice and two tablespoonfuls of chopped parsley. Pour on the beans, serving very hot. The beans may be seasoned with melted butter, salt and pepper, or with a plain white sauce, omitting the parsley and lemon juice. String beans may be cooked in the same way.











































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